

B2 Sub C1 and methylene-N-methylhydroxylamino, or by charged linkages selected from the group consisting of phosphate, charged phosphoramidate and phosphorothioate,
and the ratio of uncharged linkages to charged linkages in the oligomer is at least 4:1. *why ?*

B2 Sub C1 6. (Amended) The compound of claim 1, wherein the targeting nucleic acid sequence has a length of 10 to 20 bases.

B2 Sub C1 13. (Amended) The compound of claim 1, wherein the targeting sequence has the sequence presented as SEQ ID NO: 47 (*E. coli secA*).

17. (Amended) A method of treating a bacterial infection in a human or mammalian animal subject, comprising

administering to the subject, in a pharmaceutically effective amount, a substantially uncharged antisense oligomer containing from 10 to 40 nucleotide subunits, each of said subunits comprising a 5- or 6-membered ring supporting a base-pairing moiety effective to bind by Watson-Crick base pairing to a respective nucleotide base, said base-pairing moieties including a targeting nucleic acid sequence at least 10 nucleotides in length which is effective to hybridize to a target sequence, containing a translational start codon, within a bacterial nucleic acid which encodes an *E. coli secA* protein;

wherein adjacent subunits are joined by uncharged linkages selected from the group consisting of: uncharged phosphoramidate, phosphorodiamidate, carbonate, carbamate, amide, phosphotriester, alkyl phosphonate, siloxane, sulfone, sulfonamide, sulfamate, thioformacetyl, and methylene-N-methylhydroxylamino, or by charged linkages selected from the group consisting of phosphate, charged phosphoramidate and phosphorothioate,

and the ratio of uncharged linkages to charged linkages in the oligomer is at least 4:1.

B2 Sub C1 23. (Amended) The method of claim 17, wherein the targeting nucleic acid sequence has a length of 10 to 20 bases.

B2 Sub C1 30. (Amended) The method of claim 17, wherein the targeting sequence has the sequence

36. (Amended) A livestock and poultry food composition containing a food grain supplemented with a subtherapeutic amount of an antibacterial compound, said compound consisting of a substantially uncharged antisense oligomer containing from 10 to 40 nucleotide subunits, each of said subunits comprising a 5- or 6-membered ring supporting a base-pairing moiety effective to bind by Watson-Crick base pairing to a respective nucleotide base, said base-pairing moieties including a targeting nucleic acid sequence at least 10 nucleotides in length which is effective to hybridize to a target sequence, containing a translational start codon, within a bacterial nucleic acid which encodes an *E. coli secA* protein;

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wherein adjacent subunits are joined by uncharged linkages selected from the group consisting of: uncharged phosphoramidate, phosphorodiamidate, carbonate, carbamate, amide, phosphotriester, alkyl phosphonate, siloxane, sulfone, sulfonamide, sulfamate, thioformacetyl, and methylene-N-methylhydroxylamino, or by charged linkages selected from the group consisting of phosphate, charged phosphoramidate and phosphorothioate,

and the ratio of uncharged linkages to charged linkages in the oligomer is at least 4:1.

39. (Amended) The composition of claim 36, wherein the targeting nucleic acid sequence has a length of 10 to 20 bases.

40. (Amended) A method of preparing a vaccine against a selected bacteria, comprising: incubating the bacteria in the presence of an antisense morpholino-based antisense oligomer having

- (a) from 8 to 40 nucleotide subunits, including a targeting base sequence effective to hybridize to a translation initiation region in an mRNA transcribed from a *secA* gene of the selected bacteria; and
- (b) uncharged phosphorous-containing intersubunit linkages, as shown in Figures 2A-2D herein;

in an amount of oligomer effective to produce replication-crippled, morphologically abnormal bacterial cells,

Assume mechanism?